

**REMARKS**

Claims 1-20, all the claims presently pending in the application, stand rejected under 35 USC §101 as allegedly directed toward non-statutory subject matter. Claims 5, 8, and 14 stand rejected under 35 USC §102(b) as anticipated by U.S. Patent No. 6,496,741 to Whiffen.

Applicants gratefully acknowledge the Examiner's indication that, if the non-statutory rejection is overcome, claims 1-4 and 9-13 would be allowed and claims 6, 7, and 15-20 would be allowable if rewritten in independent format.

Applicants respectfully traverse these rejections.

**I. THE CLAIMED INVENTION**

In one aspect and as described in the specification and defined by, for example, claim 5, the present invention is directed to an apparatus for calculating a global optimization to a minimum-maximum problem. A first calculator provides a plurality of minimum values and a second calculator locates a global optimum value, given this plurality of minimum values.

Conventional techniques for arriving at a global optimum, as described beginning at line 19 of page 2 of the specification, are NP-hard and difficult to resolve in a reasonable time. These conventional methods include Simulated Annealing, Genetic Algorithm, or other Monte Carlo type techniques.

The claimed invention, on the other hand, provides a method to find a global optimum to a minimum-maximum problem by first calculating a plurality of minimum values and then using these minimum values to locate the global optimum value.

## II. THE 35 USC §101 REJECTION

Claims 1-20 stand rejected under 35 U.S.C. §101 as allegedly directed to non-statutory subject matter. As best understood, the Examiner considers that the present invention fails to provide a "useful, concrete and tangible result", the test confirmed in *State Street* and *AT&T* as appropriate for software-related patents.

Applicants respectfully disagree since, first, the method claims 1-4 are clearly describing a process being executed on a computer. As such, Applicants submit that even the USPTO would have to admit that the process is inherently concrete and tangible, since, otherwise, the USPTO would not themselves be using computer tools. Relative to the issue of usefulness, the present invention was originally developed as a tool to determine an optimal design of three-dimensional parts for manufacturing, as constrained by prescribed tolerances. Applicants submit that this result is a real-world, useful result. Therefore, Applicants submit that method claims 1-4 are indeed directed toward statutory subject matter.

Relative to apparatus claims 5-7, system claim 8, and claims 14-20, Applicants submit that these claims are allowable either because of their definition as hardware and/or software systems or, if viewed from the aspect of software modules, because one of ordinary skill in the art would consider that the description clearly indicates that the claimed invention is directed to modules in control of a digital machine. Relative to claim 13, Applicants submit that this claim is directed to a business method based upon using the method of the present invention on a computer. Finally, relative to claims 9-12, Applicants submit that these claims are Beauregard claims, meaning that they are directed to media that tangibly embody the machine-readable instructions and are clearly statutory subject matter.

In view of the foregoing, the Examiner is respectfully requested to reconsider and

withdraw this rejection.

### III. THE PRIOR ART REJECTION

The Examiner alleges that Whiffen teaches the claimed invention defined by claims 5, 8, and 14. The Examiner points to lines 28-36 of column 6, as well as lines 8-33 of column 12 and Figure 3.

Applicants submit that, to one having ordinary skill in the art, even if these lines in Whiffen make reference to finding an optimum, they do not reasonably teach or suggest the method defined by the independent claims 5, 8, and 14. That is, although these lines indicate that parameters are optimized, there is no discussion related to the concepts described in these independent claims that a plurality of minimum values are first calculated and these minimum values are then used to locate a global optimum value. Applicants respectfully request that the Examiner point to specific lines and columns that provide reasonable support for the allegations in the rejection, should this rejection be maintained.

Hence, turning to the clear language of the claims, in Whiffen there is no teaching or suggestion of: "... a first calculator to provide a plurality of minimum values; and a second calculator to locate a global optimum value, given said plurality of minimum values", as required by independent claim 5. Independent claims 8 and 14 have similar language.

Therefore, Applicant submits that there are elements of the claimed invention that are not taught or suggest by Whiffen, and the Examiner is respectfully requested to reconsider and withdraw this rejection.

#### IV. FORMAL MATTERS AND CONCLUSION

In view of the foregoing, Applicant submits that claims 1-20, all the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Assignee's Deposit Account No. 50-0510.

Respectfully Submitted,

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